

NWS FORM E-19 (COVER)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
NATIONAL WEATHER SERVICE

REPORT ON RIVER GAGE STATION

REVISED, PRINTED DATES: 06/04/2013, 06/05/2013

LOCATION: GENOA

STREAM: LOUP RIVER

Basin: LOUP 5

HSA: GID

REFERENCES:

WATER RESOURCES DATA FOR NE - USGS  
WS FORM E-19 - AUGUST 1980, FEBRUARY 1991 AND JANUARY 1994  
USGS STATION DESCRIPTION - 4/2/2009  
USGS STATION DESCRIPTION - APRIL 2001  
GENOA LEADER TIMES - NEWSPAPER  
USGS FORM 9-197 - OCTOBER 1989

ABBREVIATIONS:

BM - bench mark	EPA - Environmental Protection Agency
DS - downstream	IBWC - International Boundary and Water Comm.
US - upstream	MSRC - Mississippi River Commission
HW - high water	MORC - Missouri River Commission
LW - low water	NOAA - National Oceanic and Atmospheric Admin.
RB - right bank	NOS - National Ocean Survey
LB - left bank	NWS - National Weather Service
MGL - mean gulf level	TVA - Tennessee Valley Authority
MLW - mean low water	USACE - U.S. Army Corps of Engineers
MSL - mean sea level	USBR - U.S. Bureau of Reclamation
MLT - mean low tide	USGS - U.S. Geological Survey
MT - mean tide	USWB - U.S. Weather Bureau
WQ - water quality	NGVD - National Geodetic Vertical Datum
RM - reference mark	NAD - North American Datum
RP - reference point	

LOCATION IDENTIFICATION: GELN1  
NWS INDEX NUMBER: 25-3191-6  
USGS NUMBER: 06793000

MAP OF GAGE LOCATION

LATITUDE: 41 25 7                      SOURCE: USGS  
LONGITUDE: 97 43 25

LOCATION: LOUP RIVER NEAR GENOA, NE  
ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 1: GAGE MAP

## BENCHMARKS

ELEVATION OF GAGE ZERO: 1540.130      VERTICAL DATUM: NGVD 1929  
LEVELING AGENCY AND DATE: 4/27/2004      CHECKBAR: 25.980  
RATING AGENCY: USGS

BENCHMARK	DESCRIPTION	GAGE ZERO	DATUM
RM13	A LINE ON THE ONE FOOT SQUARE CORNER RIGHT OF WAY POST THAT IS NEAR THE RIVER ON THE RIGHT DOWNSTREAM BANK. LEVELS OF 5/17/94.	12.650	1552.780
RM14	TOP OF THE CHANNEL IRON LEG AT THE NORTHWEST CORNER OF THE GAGE HOUSE FRAME. LEVELS OF 10/16/2000.	23.600	1563.730
RM15	A STANDARD USGS BRASS TABLET ON THE RIGHT UPSTREAM HANDRAIL OF THE BRIDGE.	26.410	1566.540
USCGS	A USC & GS BENCH MARK IS LOCATED ON THE LEFT UPSTREAM HANDRAIL OF THE BRIDGE AND IS MARKED 309K.	26.390	1566.520

LOCATION: LOUP RIVER NEAR GENOA, NE  
ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 2: BENCHMARKS

## GAGES

DCP

TELEM

NESS ID: DDD90216  
 OWNER: USGS  
 REPORT TIME: 005300  
 INTERVAL: 60  
 CRITERIA: PC HG

TYPE OF TELEMETRY: sutrn8200  
 OWNER: USGS  
 PHONE NUMBER:  
 INTERVAL:  
 CRITERIA:  
 PAYOR/COST OF LINE: Unk / \$

GAGE TYPE	OWNER	MAINTENANCE	BEGAN	ENDED	GAGE LOCATION/REMARKS
chain	USGS	USGS	08/17/1928	06/30/1932	THIS WAS THE ORIGINAL CHAIN GAGE. GAGE DATUM WAS 1.49 FEET HIGHER THAN THAT OF PRESENT GAGE.
Unk	USGS	USGS	10/01/1943	05/04/1955	WATER STAGE RECORDER WAS LOCATED ON THE DOWNSTREAM END OF THE LEFT PIER OF THE OLD HIGHWAY 39 BRIDGE, EXCEPT FOR THE PERIOD 4/26 TO 12/22/49, WHEN A WIRE WEIGHT GAGE WAS USED DUE TO BRIDGE REPAIR.
wireweight	USGS	USGS	10/01/1943		WIRE WEIGHT GAGE ATTACHED TO THE DOWNSTREAM RAILING OF BRIDGE.
wireweight	USGS	USGS	04/26/1949	12/22/1949	WIRE WEIGHT GAGE WAS USED DURING BRIDGE REPAIR.
Unk	USGS	USGS	05/05/1955	08/13/1966	RECORDING GAGE WAS MOVED TO THE DOWNSTREAM END OF THE RIGHT PIER NO. 4, SET TO THE SAME GAGE DATUM. FLOOD OF 08/13/66 WASHED PIER GAGE AND EQUIPMENT AWAY.
Unk	USGS	USGS	08/08/1957	09/30/1958	AN AUXILIARY RECORDING GAGE WAS ESTABLISHED TO IMPROVE TO LOW WATER GAGE HEIGHT RECORD. THIS GAGE WAS SET TO THE SAME DATUM AS THE PIER GAGE.
Unk	USGS	USGS	09/09/1966	06/09/1997	FISCHER-PORTER DIGITAL RECORDER REMOVED ON 06/09/1997.
bubble	USGS	USGS	09/09/1966	04/05/2000	MANOMETER WITH GAS PURGE SYSTEM ESTABLISHED ON THE RIGHT BANK DOWNSTREAM SIDE OF BRIDGE. FROM 08/17/1974 TO 11/21/1977 GAGE WAS ON RIGHT BANK, 300 FEET UPSTREAM FROM BRIDGE. MANOMETER WAS REMOVED ON 04/05/2000.
Unk	NWS	NWS	09/01/1984	06/07/1990	LARC REPLACED TELEMAR GAGE IN 1990.
Unk	NWS	NWS	06/07/1990	04/06/2001	LARC REPLACED TELEMAR GAGE. DRIVEN BY A BUBBLER GAGE, HOUSED IS A TOPEKA TYPE METAL SHELTER. LARC REMOVED IN 2001.
bubble	USGS	USGS	06/10/1997		SUTRON 8200 INSTALLED AND ACTIVATED BY SERVO-MANOMETER AND GAS-PURGE SYSTEM. MANOMETER WAS REMOVED 04/05/2000 AND SUTRON ACCUBAR WAS INSTALLED. ACCUBAR IS CONNECTED TO A STANDARD 1.25" WELL SAND-POINT DRIVEN INTO THE STREAMBED NEAR RIGHT BANK AT GAGE.
bubble	USGS	USGS	04/05/2000		SAFE-PURGE PRECISION BUBBLER SYSTEM WITH PURGE GAS CONTROL. MANOMETER AND STEVENS A-35 RECORDER WAS REMOVED AT THIS TIME.
tipping	NWS	USGS	10/01/2002		NWS OWNED TIPPING BUCKET RAIN GAGE WAS INSTALLED BY THE USGS SOMETIME IN 2003.
wireweight	USGS	USGS	03/17/2004	12/31/2050	A SECOND WIREWEIGHT GAGE WAS INSTALLED BECAUSE OF THE SHIFTING NATURE OF THE CHANNEL.

LOCATION: LOUP RIVER NEAR GENOA, NE  
 ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
 NWS FORM E-19 PAGE 3: GAGES

## HISTORY

PUBLICATION/LOCATION OF RECORDS	STARTING DATE	ENDING DATE
WRD NE	08/17/1928	06/30/1932
WRD NE	10/01/1943	

TYPE OF GAGE	OWNER	STARTING DATE	ENDING DATE
chain	USGS	08/17/1928	06/30/1932
Unk	USGS	10/01/1943	05/04/1955
wireweight	USGS	10/01/1943	
wireweight	USGS	04/26/1949	12/22/1949
Unk	USGS	05/05/1955	08/13/1966
Unk	USGS	08/08/1957	09/30/1958
Unk	USGS	09/09/1966	06/09/1997
bubble	USGS	09/09/1966	04/05/2000
Unk	NWS	09/01/1984	06/07/1990
Unk	NWS	06/07/1990	04/06/2001
bubble	USGS	06/10/1997	
bubble	USGS	04/05/2000	
tipping	NWS	10/01/2002	
wireweight	USGS	03/17/2004	12/31/2050

ZERO ELEVATION	STARTING DATE
1541.620	1928-08-17
1540.130	1943-10-01

LOCATION: LOUP RIVER NEAR GENOA, NE  
ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 4: HISTORY

## CRESTS

FLOOD STAGE: 10.50 ACTION STAGE: 9.00 BANKFULL STAGE: 9.00  
 FLOOD FLOW: ACTION FLOW:

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON CAUSED BY OLD DATUM ICE JAM	REMARKS
03/12/1929	UNDEF	7.13	20000			
06/04/1930	UNDEF	4.69	11200			
06/21/1931	UNDEF	4.89	9350			
05/31/1932	UNDEF	6.09	29200			
04/24/1944	UNDEF	5.65	8140			
06/10/1945	UNDEF	6.90	18800			
06/18/1946	UNDEF	6.16	11000			
06/23/1947	UNDEF	10.12	90000			
03/16/1948	UNDEF	7.61	25000			
06/01/1949	UNDEF	6.28	14100			
07/09/1950	UNDEF	7.92	39300			
05/31/1951	UNDEF	6.03	9370			
03/26/1952	UNDEF	7.34	10800			
05/10/1953	UNDEF	7.33	16000			
06/18/1954	UNDEF	6.94	11400			
03/11/1955	UNDEF	6.47	6250			
11/22/1955	UNDEF	8.25	10700			
06/17/1957	UNDEF	8.80	26100			
07/19/1958	UNDEF	8.42	10900			
12/03/1958	UNDEF	7.18	5460			
03/28/1960	UNDEF	11.20	45000			
06/15/1961	UNDEF	8.20	6250			
02/16/1962	UNDEF	10.00				X
03/26/1962	UNDEF	9.50	20500			
12/18/1962	UNDEF	7.83				X
12/20/1962	UNDEF	7.28	3960			
05/26/1964	UNDEF	9.75	32800			
05/26/1965	UNDEF	10.10	22000			
08/13/1966	UNDEF	13.93	129000			RECORD FLOOD.
06/15/1967	UNDEF	10.67	41100			
06/25/1968	UNDEF	10.17	29600			
03/19/1969	UNDEF	10.80	15800			
04/13/1970	UNDEF	6.82	6340			
02/20/1971	UNDEF	10.07	18900			
07/27/1972	UNDEF	8.22	12200			
05/28/1973	UNDEF	7.94	10000			
06/10/1974	UNDEF	7.96	10000			
06/22/1975	UNDEF	8.16	7020			
06/25/1976	UNDEF	8.09	8990			
05/22/1977	UNDEF	7.60	8440			
03/18/1978	UNDEF	12.12	37500			X
03/22/1979	UNDEF	8.20	12300			
12/22/1979	UNDEF	7.50	7330			X
08/05/1981	UNDEF	10.00	22000			
05/30/1982	UNDEF	8.89	18900			

LOCATION: LOUP RIVER NEAR GENOA, NE  
 ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
 NWS FORM E-19 PAGE 5: CREST

DATE OF CREST	TIME LST	CREST (ft)	FLOW (CFS)	FROM HIGH WATERMARKS	BASED ON OLD DATUM	CAUSED BY ICE JAM	REMARKS
06/29/1983	UNDEF	7.95	11200				
06/13/1984	UNDEF	10.62	44700				
09/14/1985	UNDEF	7.66	12100				
02/27/1986	UNDEF	7.08	10500				
03/18/1987	UNDEF	8.50	17900				
02/27/1988	UNDEF	8.54	10600				
03/10/1989	UNDEF	9.40	11600	X		X	
06/17/1990	UNDEF	9.11	21900				
06/02/1991	UNDEF	6.86	6080				
08/05/1992	UNDEF	7.71	12600				
03/08/1993	UNDEF	12.70	32000			X	
07/09/1993	UNDEF	10.10					
07/24/1993	UNDEF	11.01	37400				
01/27/1994	UNDEF	10.33				X	BACKWATER FROM ICE.
03/05/1994	UNDEF	10.17	17300				
03/10/1995	UNDEF	10.78				X	ICE JAM.
05/28/1995	UNDEF	8.81	20500				
05/28/1996	UNDEF	7.25	8510				
02/21/1997	UNDEF	13.44	39700			X	BACKWATER FROM ICE.
06/18/1998	UNDEF	8.03	13300				
06/28/1999	UNDEF	8.42	16800				
12/26/2000	UNDEF	6.67	3370				
04/23/2001	UNDEF	8.22	14600				
03/13/2002	UNDEF	8.24	14800				
05/05/2003	UNDEF	7.14	6340			X	
03/01/2004	UNDEF	7.98	9000				
01/23/2005	UNDEF	8.15				X	BACKWATER FROM ICE.
06/04/2005	UNDEF	7.63	9480				
02/17/2006	UNDEF	7.83				X	Backwater from ice
09/11/2006	UNDEF	7.74	8760				
02/21/2007	UNDEF	10.87				X	Backwater due to ice jam.
05/30/2007	UNDEF	9.91	23600				
05/24/2008	UNDEF	10.99	22000				MAXIMUM PEAK STAGE AND MAXIMUM PEAK FLOW FOR THE YEAR.
05/25/2008	01:30	10.66	48560				
10/25/2008	UNDEF	7.88	10300				
02/10/2009	UNDEF	9.52				X	
03/10/2010	UNDEF	13.85				X	
06/15/2010	UNDEF	10.47	29000				
02/19/2011	UNDEF	10.19				X	
06/21/2011	UNDEF	8.47	14200				

LOCATION: LOUP RIVER NEAR GENOA, NE  
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Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 5-2: CREST

LOW WATER RECORDS

DATE OF LOW WATER	STAGE (ft)	FLOW (CFS)	REMARKS
06/01/1956	0.00	0	NO FLOW AT TIMES IN 56, 59, 61, 63, 70, 73-75
07/27/1976	3.61	0	
08/04/2008		4	LOWEST DAILY MEAN WAS ACTUALLY 4.2 CFS.

LOCATION: LOUP RIVER NEAR GENOA, NE  
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Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 6: LOW WATER



CONDITIONS AFFECTING FLOW

MILES ABOVE MOUTH: 26.8          DRAINAGE AREA: 14320.0          POOL STAGE: 0.0

STREAM BED: COMPOSED MAINLY OF FINE SAND AND SILT.

REACH: UPSTREAM 6 MILES TO DIVERSION DAM, DOWNSTREAM TO MONROE  
BRIDGE.

REGULATION: LOUP RIVER PUBLIC POWER IRRIGATION DISTRICT DAM, BUILT IN  
1936, DIVERTS UP TO 3000 CFS AT A POINT 6 MILES UPSTREAM  
INTO POWER CANAL.

DIVERSION:

WINTER: CHANNEL SUBJECT TO FREEZING AND ICE JAMS.

TOPOGRAPHY: CHANNEL IS WIDE AND SHALLOW. BANKS ARE LOW ON BOTH SIDES,  
THE RIGHT BANK IS COVERED WITH TIMBER AND LEFT BANK IS  
FRINGED WITH WILLOWS AND TREES. PORTION OF CHANNEL  
UPSTREAM HAS BEEN DREDGED TO KEEP FLOW AT RIGHT ANGLES TO  
BRIDGE.

REMARKS:

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ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 7: CONDITIONS

DAMAGE

STAGE      AREAS AFFECTED

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9.00	RURAL OVERFLOWS BEGIN. LOUP RIVER DIVERSION UPSTREAM MAY DIVERT FLOWS FROM THE CHANNEL.
10.50	FLOOD STAGE - MORE LOWLAND FLOODING OCCURS. URBAN AREAS SUCH AS GENOA OR MONROE ARE NOT IN THE FLOOD PLAIN, THUS HOMES & BUSINESSES ARE NOT FLOODED, EVEN WITH EXTREME FLOWS.
13.93	DAMAGE UNKNOWN.

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ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 8: DAMAGE

RIVER STAGE DATA

13.93 - DAMAGE UNKNOWN.

13-

10.50 - FLOOD STAGE - MORE LOWLAND FLOODING OCCURS. URBAN AREAS SUCH AS GENOA OR MONROE ARE NOT IN THE FLOOD PLAIN, THUS HOMES & BUSINESSES ARE NOT FLOODED, EVEN WITH EXTREME FLOWS.

9.00 - RURAL OVERFLOWS BEGIN. LOUP RIVER DIVERSION UPSTREAM MAY DIVERT FLOWS FROM THE CHANNEL.

REACH: UPSTREAM 6 MILES TO DIVERSION DAM, DOWNSTREAM TO MONROE BRIDGE.

ELEVATION ZERO: 1540.13

LOCATION: LOUP RIVER NEAR GENOA, NE  
ID: GELN1

HSA: GID

Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 9: STAFF

## CONTACTS

SQ	CONTACT/REMARKS	PHONE
1	Andy Zarek River Reader for wire weight cell phone 402-649-8152	402-993-2598
2	USGS LINCOLN OFFICE MAINTENANCE.	402-328-4100

LOCATION: LOUP RIVER NEAR GENOA, NE  
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Revised, Printed Dates: 06/04/2013, 06/05/2013  
NWS FORM E-19 PAGE 10: CONTACTS